

WHAT IS CLAIMED IS:

1. A method of decoding turbo-encoded, received data in CDMA (Code  
Division Multiple Access) system which carries out closed-loop control to electric  
5 power of a data transmitter, based on a signal to interference ratio,

said method comprising the steps of:

(a) weighting reverse-diffused, received data, based on both said signal to  
interference ratio and data obtained when said signal to interference ratio is  
measured;

10 (b) carrying out ACS operation or comparison/selection operation in a process  
of updating alpha metric, a process of updating beta metric, and a process for  
computing likelihood, to the thus weighted, received data; and

(c) compensating for results of said ACS operation, based on a predetermined  
value associated with a difference generated when said ACS operation or said  
15 comparison/selection operation is carried out.

2. The method as set forth in claim 1, wherein said step (a) is carried out in  
each of slot periods.

20 3. The method as set forth in claim 1, wherein said step (a) includes a step of  
multiplying X with said reverse-diffused, received data, said X being defined as a  
value which is in proportion to a value obtained by dividing a root of a signal  
power per a slot by an interference power per a slot.

25 4. The method as set forth in claim 1, wherein said comparison/selection  
operation is carried out by means of a subtracting circuit, and said results of said  
ACS operation are compensated for by means of a logic circuit which receives an  
output or an absolute value of an output transmitted from said subtracting circuit,  
and outputs a predetermined value in accordance with said output.



9. The method as set forth in claim 6, wherein said comparison/selection operation is carried out by means of a subtracting circuit, and said results of said ACS operation are compensated for by means of a logic circuit which receives an output or an absolute value of an output transmitted from said subtracting circuit,  
5 and outputs a predetermined value in accordance with said output.

10. The method as set forth in claim 6, wherein said step (a) is carried out through a firmware defined by a processor for processing digital signals, and said step (c) is carried out through a hardware including a logic gate.

11. A receiver for decoding turbo-encoded, received data in CDMA (Code Division Multiple Access) system which carries out closed-loop control to electric power of a data transmitter, based on a signal to interference ratio,

said receiver comprising:

15 (a) a power controller for weighting reverse-diffused, received data, based on both said signal to interference ratio and data obtained when said signal to interference ratio is measured; and

(b) a turbo decoder which carries out ACS operation or comparison/selection operation in a process of updating alpha metric, a process of updating beta metric,  
20 and a process for computing likelihood, to the thus weighted, received data, and compensates for results of said ACS operation, based on a predetermined value associated with a difference generated when said ACS operation or said comparison/selection operation is carried out.

25 12. The receiver as set forth in claim 11, wherein said power controller carries out weighting reverse-diffused, received data in each of slot periods.

13. The receiver as set forth in claim 11, wherein said power controller multiplies X with said reverse-diffused, received data, said X being defined as a



computing likelihood, based on a predetermined value associated with a difference generated when said ACS operation or said comparison/selection operation is carried out.

5        17. The receiver as set forth in claim 16, wherein said power controller carries out weighting reverse-diffused, received data in each of slot periods.

10        18. The receiver as set forth in claim 16, wherein said power controller multiplies X with said reverse-diffused, received data, said X being defined as a value which is in proportion to a value obtained by dividing a root of a signal power per a slot by an interference power per a slot.

15        19. The receiver as set forth in claim 16, wherein said turbo decoder is comprised of:

(b1) a subtracting circuit which carries out said comparison/selection operation; and

20        (b2) a logic circuit which compensates for said results of said ACS operation, said logic circuit receiving an output or an absolute value of an output transmitted from said subtracting circuit, and outputting a predetermined value in accordance with said output

25        20. The receiver as set forth in claim 16, wherein said power controller weights reverse-diffused, received data through a firmware defined by a processor for processing digital signals, and said turbo decoder compensates for said results of said ACS operation through a hardware including a logic gate.

21. A combination of a turbo encoder for turbo-encoding data to be transmitted, and a receiver for decoding turbo-encoded, received data in CDMA (Code Division Multiple Access) system which carries out closed-loop control to

electric power of a data transmitter, based on a signal to interference ratio,

said turbo encoder comprising a plurality of component encoders arranged in parallel with one another,

said receiver comprising:

- 5 (a) a power controller for weighting reverse-diffused, received data, based on both said signal to interference ratio and data obtained when said signal to interference ratio is measured; and

- (b) a turbo decoder which carries out ACS operation or comparison/selection operation in a process of updating alpha metric, a process of updating beta metric,  
10 and a process for computing likelihood, to the thus weighted, received data, and compensates for results of said ACS operation, based on a predetermined value associated with a difference generated when said ACS operation or said comparison/selection operation is carried out.

- 15 22. The combination as set forth in claim 21, wherein said turbo encoder includes:

(a) first to N-th component encoders each of which receives data series to be encoded, wherein N is an integer equal to or greater than 2;

- (b) an interleaver connected to said component encoders in parallel to  
20 rearrange said data series in accordance with a predetermined rule, said interleaver receiving said data series and transmitting said data series to said second to N-th component encoders; and

(c) a switch which switches parity series transmitted said component encoders.

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23. A combination of a turbo encoder for turbo-encoding data to be transmitted, and a receiver for decoding turbo-encoded, received data in CDMA (Code Division Multiple Access) system which carries out closed-loop control to electric power of a data transmitter, based on a signal to interference ratio,

said turbo encoder comprising a plurality of component encoders arranged in parallel with one another,

said receiver comprising:

(a) a power controller for weighting reverse-diffused, received data, based on both said signal to interference ratio and data obtained when said signal to interference ratio is measured; and

(b) a turbo decoder which carries out ACS operation or comparison/selection operation in a process of updating alpha metric, a process of updating beta metric, and a process for computing likelihood, to the thus weighted, received data, and compensates for results of said ACS operation in at least one of said process of updating alpha metric, said process of updating beta metric, and said process for computing likelihood, based on a predetermined value associated with a difference generated when said ACS operation or said comparison/selection operation is carried out.

24. The combination as set forth in claim 23, wherein said turbo encoder includes:

(a) first to N-th component encoders each of which receives data series to be encoded, wherein N is an integer equal to or greater than 2;

(b) an interleaver connected to said component encoders in parallel to rearrange said data series in accordance with a predetermined rule, said interleaver receiving said data series and transmitting said data series to said second to N-th component encoders; and

(c) a switch which switches parity series transmitted said component encoders

25. A combination of a turbo encoder for turbo-encoding data to be transmitted, and a receiver for decoding turbo-encoded, received data in CDMA (Code Division Multiple Access) system which carries out closed-loop control to

electric power of a data transmitter, based on a signal to interference ratio,

said turbo encoder comprising a plurality of component encoders arranged in series,

said receiver comprising:

- 5 (a) a power controller for weighting reverse-diffused, received data, based on both said signal to interference ratio and data obtained when said signal to interference ratio is measured; and

- (b) a turbo decoder which carries out ACS operation or comparison/selection operation in a process of updating alpha metric, a process of updating beta metric, 10 and a process for computing likelihood, to the thus weighted, received data, and compensates for results of said ACS operation, based on a predetermined value associated with a difference generated when said ACS operation or said comparison/selection operation is carried out.

- 15 26. The combination as set forth in claim 25, wherein said turbo encoder includes:

(a) an external encoder which receives data series to be encoded;

(b) a puncturing circuit which punctures data series and parity series both transmitted from said external encoder;

- 20 (c) an interleaver which rearranges bit arrangement in said data series and said parity series each in accordance with a predetermined rule; and

(d) an internal encoder which receives said data series from said interleaver, and separates said data series and said parity series from each other.

- 25 27. A combination of a turbo encoder for turbo-encoding data to be transmitted, and a receiver for decoding turbo-encoded, received data in CDMA (Code Division Multiple Access) system which carries out closed-loop control to electric power of a data transmitter, based on a signal to interference ratio,

said turbo encoder comprising a plurality of component encoders arranged in



series,

said receiver comprising:

(a) a power controller for weighting reverse-diffused, received data, based on both said signal to interference ratio and data obtained when said signal to interference ratio is measured; and

(b) a turbo decoder which carries out ACS operation or comparison/selection operation in a process of updating alpha metric, a process of updating beta metric, and a process for computing likelihood, to the thus weighted, received data, and compensates for results of said ACS operation in at least one of said process of updating alpha metric, said process of updating beta metric, and said process for computing likelihood, based on a predetermined value associated with a difference generated when said ACS operation or said comparison/selection operation is carried out.

28. The combination as set forth in claim 27, wherein said turbo encoder includes:

(a) an external encoder which receives data series to be encoded;

(b) a puncturing circuit which punctures data series and parity series both transmitted from said external encoder;

(c) an interleaver which rearranges bit arrangement in said data series and said parity series each in accordance with a predetermined rule; and

(d) an internal encoder which receives said data series from said interleaver, and separates said data series and said parity series from each other.

29. A recording medium readable by a computer, storing a program therein for causing a computer to carry out a method of decoding turbo-encoded, received data in CDMA (Code Division Multiple Access) system which carries out closed-loop control to electric power of a data transmitter, based on a signal to interference ratio,





Variable	Mean	SD	Min	Max
Age (years)	34.5	10.2	21	55
Gender (Male/Female)	15/15	0	0	30
Marital Status (Married/Single)	10/10	0	0	20
Occupation (Student/Professional)	10/10	0	0	20
Religious Belief (Muslim/Hindu)	10/10	0	0	20
Family Size (4-6/7-10)	10/10	0	0	20
Income (Low/Medium/High)	10/10/0	0	0	20
Education (High School/College/University)	10/10/0	0	0	20
Health Status (Good/Fair/Poor)	10/10/0	0	0	20
Stress Level (Low/Medium/High)	10/10/0	0	0	20
Life Satisfaction (High/Low)	10/10	0	0	20
Residence (Urban/Rural)	10/10	0	0	20
Employment Status (Employed/Unemployed)	10/10	0	0	20
Health Insurance (Yes/No)	10/10	0	0	20
Physical Activity (Regular/Irregular)	10/10	0	0	20
Dietary Habits (Vegetarian/Non-Vegetarian)	10/10	0	0	20
Smoking Status (Smoker/Non-Smoker)	10/10	0	0	20
Alcohol Consumption (Regular/Irregular)	10/10	0	0	20
Chronic Diseases (Hypertension/Diabetes)	10/10	0	0	20
Genetic Predisposition (Yes/No)	10/10	0	0	20
Environmental Factors (Pollution/Climate)	10/10	0	0	20
Social Support (Strong/Weak)	10/10	0	0	20
Life Events (Major/Minor)	10/10	0	0	20
Healthcare Access (Easy/Difficult)	10/10	0	0	20
Healthcare Costs (Affordable/Unaffordable)	10/10	0	0	20
Healthcare Quality (Good/Poor)	10/10	0	0	20
Healthcare Satisfaction (High/Low)	10/10	0	0	20
Healthcare Access (Easy/Difficult)	10/10	0	0	20
Healthcare Costs (Affordable/Unaffordable)	10/10	0	0	20
Healthcare Quality (Good/Poor)	10/10	0	0	20
Healthcare Satisfaction (High/Low)	10/10	0	0	20